CLAIMS:

1. A method of manipulating a laser source (2), comprising the steps of:

analyzing an optical signal (3, 4, 5) generated by the laser source (2),

evaluating on the basis of the analysis an actual indicator corresponding with an actual value of a tuning velocity of the laser source (2),

comparing the actual indicator (46) with a desired indicator (66) corresponding with a desired value of the tuning velocity to detect a deviation of the actual value of the tuning velocity from the desired value of the tuning velocity, and

compensating the deviation, if any, by manipulating at least one parameter influencing the signal (3, 4, 5) of the laser source (2).

2. The method of claim 1, further comprising the steps of:

analyzing the optical signal (3, 4, 5) by:

letting a first part (56) of the signal (3, 4, 5) interfere with a second part (58) of the signal (3, 4, 5) resulting in a superimposed signal, with the first part (56) being delayed with respect to the second part (58), and

detecting the power of the superimposed signal.

3. The method of claim 2, further comprising the steps of:

evaluating the actual indicator by:

measuring as the actual indicator a frequency (46) of oscillations of the detected power.

4. The method of claim 3, further comprising the steps of:

supplying the desired indicator by using a stored dependency of frequency of oscillations of a detected power of the signal on tuning velocity.

5. The method of claims 3 or any one of the above claims, further comprising the steps of:

supplying the desired indicator (66) by generating as the desired indicator (66) a frequency (66) corresponding to the desired tuning velocity.

6. The method of claims 3 or any one of the above claims, further comprising the steps of:

comparing the actual indicator with a desired indicator (66) by mixing the actual indicator (46) with the desired indicator (66).

7. The method of claim 1 or any one of the above claims, further comprising the steps of:

compensating the deviation if any by manipulating as a parameter a length of a cavity (6) of the laser source (2).

8. The method of claim 7, further comprising the steps of:

compensating a fast deviation, if any, by electro-optically changing an optical path length of the cavity (6).

9. The method of claim 7 or any one of the above claims, further comprising the steps of:

compensating a slow deviation if any by mechanically changing an optical path length of the cavity (6).

10. A software program or product, preferably stored on a data carrier, for executing the method of claim 1 or any one of the above claims, when run on a data processing system such as a computer.

11. An apparatus for manipulating a laser source (2), comprising:

an analyzer (30, 48, 48-2) for analyzing an optical signal (3, 4, 5) generated by the laser source (2), evaluating on the basis of the analysis an actual indicator (46) corresponding with an actual value of a tuning

velocity of the laser source (2), and comparing the actual indicator with a desired indicator (66) corresponding with a desired value of the tuning velocity to detect a deviation of the actual value of the tuning velocity from the desired value of the tuning velocity, and

a compensator (22, 24) connected to the analyzer (30, 48, 48-2) for compensating the deviation if any by manipulating at least one parameter influencing the signal (3, 4, 5) of the laser source (2).

12. The apparatus of claim 11,

wherein the analyzer (30, 48, 48-2) further comprises:

an interferometer (30) for letting a first part (56) of the signal (3, 4, 5) interfere with a second part (58) of the signal (3, 4, 5) resulting in a superimposed signal, with the first part (56) being delayed with respect to the second part (58), and

a detector(40, 42) for detecting the power of the superimposed signal.

13. The apparatus of claim 12,

wherein the analyzer (30, 48, 48-2) further comprises:

a frequency deviation detection unit (48, 48-2) connected to the detector (40, 42) for measuring as the actual indicator a frequency (46) of oscillations of the detected power.

14. The apparatus of claim 13,

wherein the analyzer (30, 48, 48-2) further comprises:

a memory (50) for storing and supplying a dependency of frequency of oscillations of a detected power of the signal on tuning velocity to supply the desired indicator to the analyzer (30, 48, 48-2).

15. The apparatus of claims 13 or any one of the above claims,

wherein the analyzer (30, 48, 48-2) further comprises:

an electrical signal generator (60) for supplying the desired indicator (66) to the analyzer (30, 48, 48-2) by generating as the desired indicator (66) a frequency corresponding to the desired tuning velocity.

16. The apparatus of claims 13 or any one of the above claims,

wherein the analyzer (30, 48, 48-2) further comprises:

a mixer (68) for comparing the actual indicator (46) with a desired indicator (66) by mixing the actual indicator (46) with the desired indicator (66).

17. The apparatus of claim 11 or any one of the above claims, further comprising:

wherein the compensator (22, 24) further comprises:

a manipulator (22, 24) for manipulating as a parameter a length of a cavity (6) of the laser source (2), the manipulator (22, 24) being controlled by the analyzer (30, 48, 48-2).

18. The apparatus of claim 17,

the manipulator (22, 24) further comprising:

an electro-optical modulator (22) in the path of the beam in the cavity (6) for compensating a fast deviation if any by electro-optically changing an optical path length of the cavity (6).

19. The apparatus of claim 17 or any one of the above claims, further comprising:

a piezo-electric element (24) acting on an cavity end element (10) of the cavity (6) for compensating a slow deviation if any by mechanically changing an optical path length of the cavity (6).